United States Department of the Interior

FISH AND WILDLIFE SERVICE
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April 24, 2017

To: Interested Parties

From: Scott Voss, Fish Biologist, Red Bluff Fish and Wildlife Office

Subject: Revised biweekly report (March 26, 2017 - April 8, 2017)

Please find attached revised preliminary daily estimates of passage, 90% confidence intervals, and fork length ranges of unmarked juvenile salmonids sampled at Red Bluff Diversion Dam for the period March 26, 2017 through April 8, 2017. Race designation was assigned using length-at-date criteria.

The revised report was corrected by removing the passage estimate generated for April 6, due to sampling difficulties related to a large in-flux of unmarked fish occurring following a release of 6.5 million Coleman National Fish Hatchery fall run Chinook production fish on April 5, 2017. Marked and unmarked fish were not properly sampled according to established protocols resulting in errors in passage estimates for unmarked fall and spring run Chinook. This sample date has been removed from the bi-weekly and annual estimates as well as resultant confidence interval calculations.

This report also contains graphical displays of salmonid passage dating back to 2010 for comparison.

Please note that data contained in these reports is subject to revision as this data is preliminary and undergoing QA/QC procedures.

If you have any questions, please feel free to contact me at (530) 527-3043 ext 243.

Table 1.– Preliminary estimates of passage by brood-year (BY) and run for unmarked juvenile Chinook salmon and steelhead trout captured by rotary-screw traps at Red Bluff Diversion Dam (RK391), Sacramento River, CA, for the dates listed below. Results include estimated passage, peak river discharge volume, water temperature, turbidity, and fork length (mm) range in parentheses. A dash (-) indicates that sampling was not conducted on that date.

Date	Discharge volume (cfs) [1]	Water temperature (°C)	Water turbidity (NTU)	Estimated passage				
				BY16 Winter	BY16 Spring	BY16 Fall	BY17 Late-Fall	BY17 RBT
3/26/2017	27,700	10.9	34.4	292 (131)	31,148 (72 – 91)	71,272 (29 – 71)	(0 – 0)	0 (–)
3/27/2017	23,300	10.8	–	–	–	–	–	–
3/28/2017	23,700	11.4	25.1	480 (101 – 112)	27,182 (73 – 87)	75,067 (32 – 72)	(0 – 0)	252 (23)
3/29/2017	17,800	11.7	29.1	202 (113 – 126)	11,927 (73 – 96)	18,649 (30 – 72)	(0 – 0)	0 (–)
3/30/2017	16,600	11.7	20.5	49 (100)	5,523 (74 – 93)	9,912 (31 – 73)	(0 – 0)	0 (–)
3/31/2017	16,500	11.6	20.2	0 (–)	4,225 (74 – 98)	7,356 (32 – 73)	(0 – 0)	0 (–)
4/1/2017	16,000	12.1	18.9	0 (–)	3,735 (75 – 100)	5,423 (34 – 74)	47 (30)	0 (–)
4/2/2017	15,200	12.9	17	0 (–)	2,998 (75 – 91)	3,806 (35 – 74)	285 (31 – 34)	0 (–)
4/3/2017	14,700	12.8	15.2	47 (127)	2,916 (76 – 100)	2,116 (35 – 75)	235 (32 – 34)	0 (–)
4/4/2017	14,400	12.6	15.3	0 (–)	2,545 (76 – 94)	2,068 (35 – 75)	94 (33)	0 (–)
4/5/2017	14,400	12.4	14.9	0 (–)	1,459 (77 – 95)	1,549 (35 – 76)	44 (34)	0 (–)
4/6/2017	14,000	11.8	–	–	–	–	–	–
4/7/2017	37,300	11.6	–	–	–	–	–	–
4/8/2017	35,800	11.5	–	–	–	–	–	–
Biweekly Total [2]				**1,276**	**115,053**	**235,652**	**1,128**	**294**
Biweekly Lower 90% Confidence Interval				229	55,224	100,360	401	-116
Biweekly Upper 90% Confidence Interval				2,322	174,882	370,944	1,855	704
Brood Year Total				**537,519**	**230,460**	**8,643,804**	**1,128**	**1,359**
Brood year Lower 90% Confidence Interval				385,408	5,694	-3,364,581	401	-1,058
Brood year Upper 90% Confidence Interval				689,629	455,227	20,652,190	1,855	3,777

[1] Peak daily discharge values do not account for diversions at RBDD and only represent peak flows registered at the Bend Bridge Gauging station (http://cdec2.water.ca.gov/cgi-progs/queryFx?bnd).

[2] Biweekly totals may be greater than the sum of the daily estimates presented in this table if sampling was not conducted on each day of the biweekly period. A dash (-) denotes those dates. To estimate daily passage for days that were not sampled, we impute missed sample days with the weekly mean value of days sampled within the week.

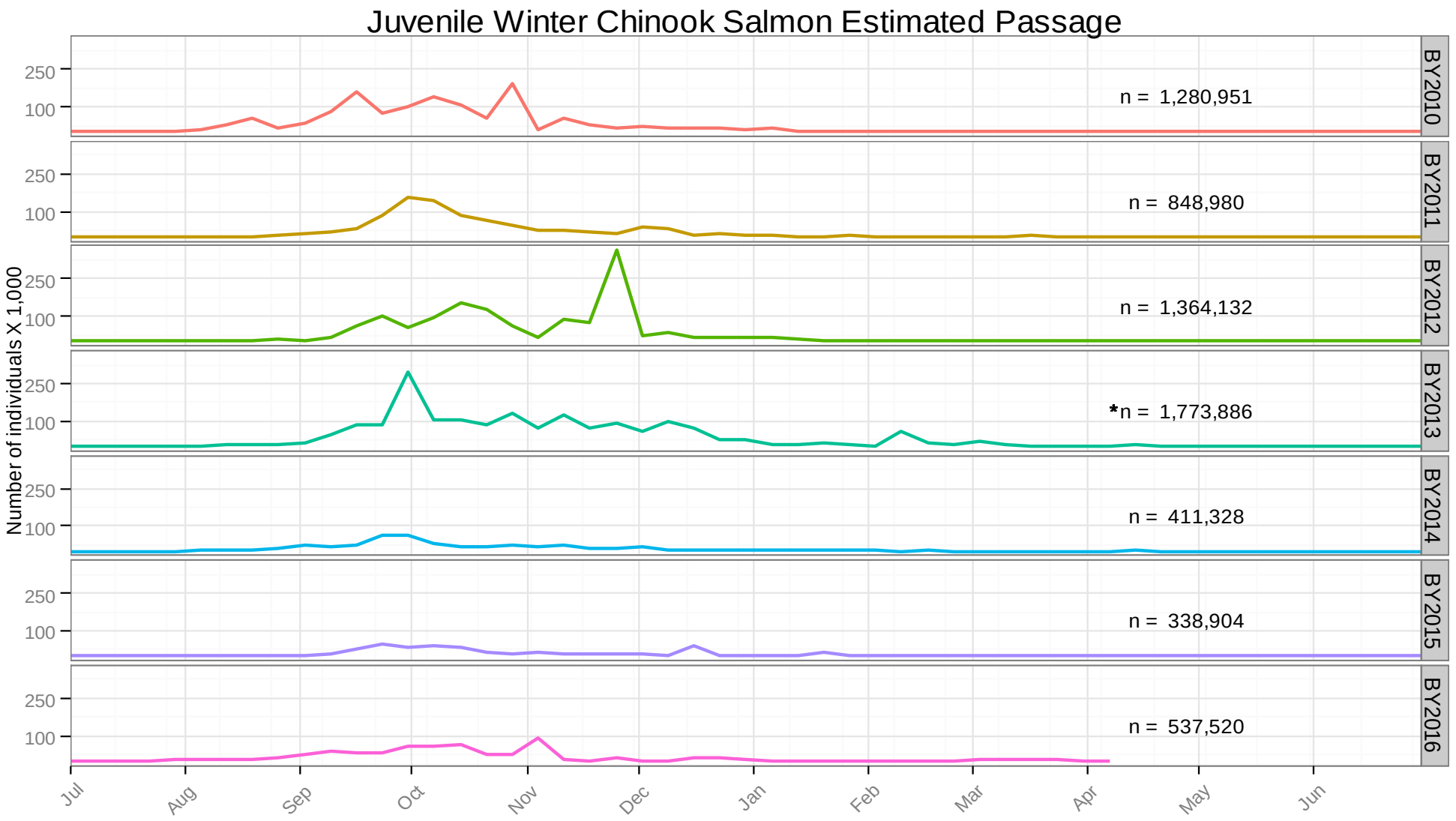

Figure 1. Weekly estimated passage of unmarked juvenile winter Chinook salmon at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period July 1, 2010 to present .

*Winter run passage value interpolated using a monthly mean for the period October 1, 2013 - October 17, 2013 due to government shutdown .

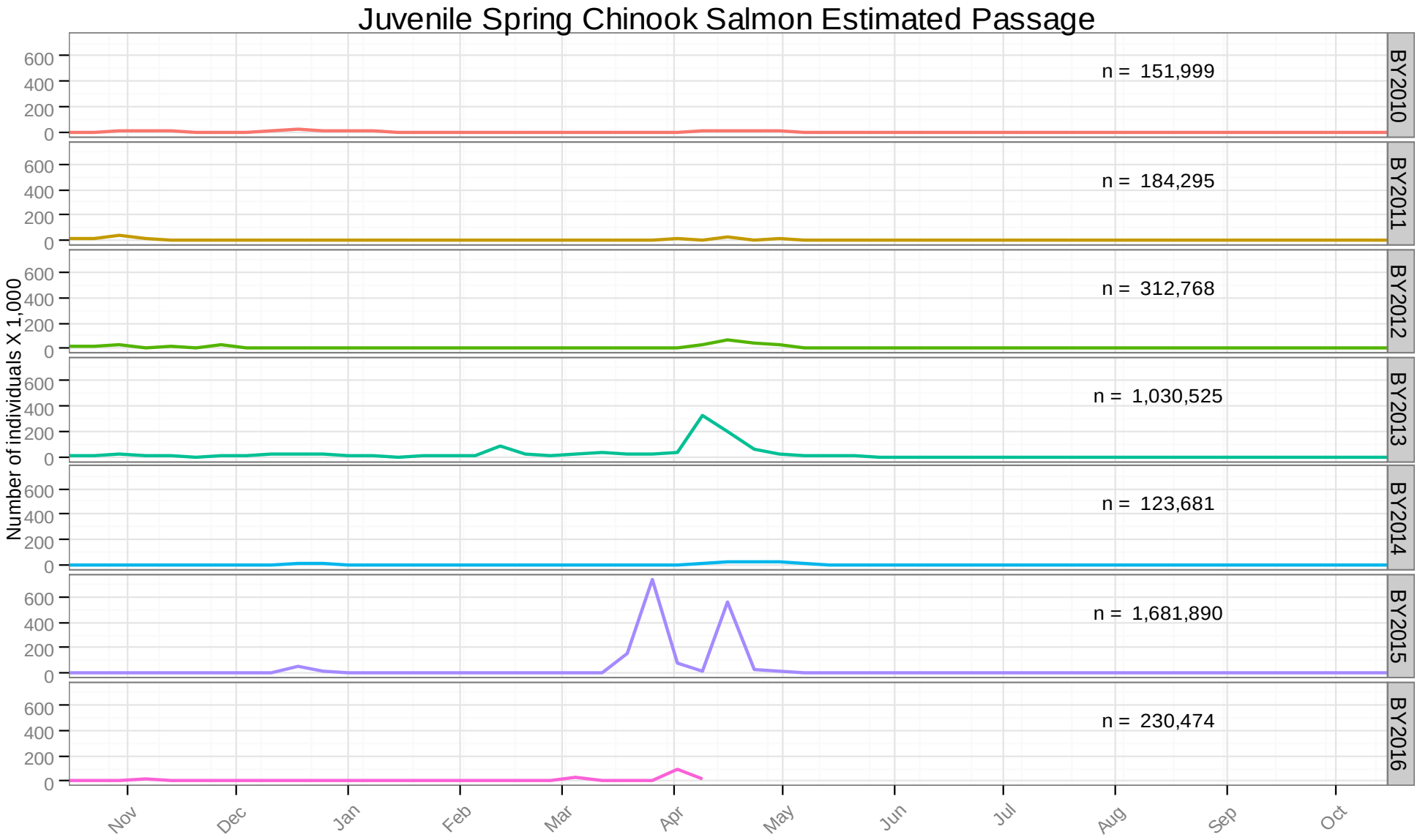

Figure 2. Weekly estimated passage of unmarked juvenile spring Chinook salmon at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period October 16, 2010 to present .

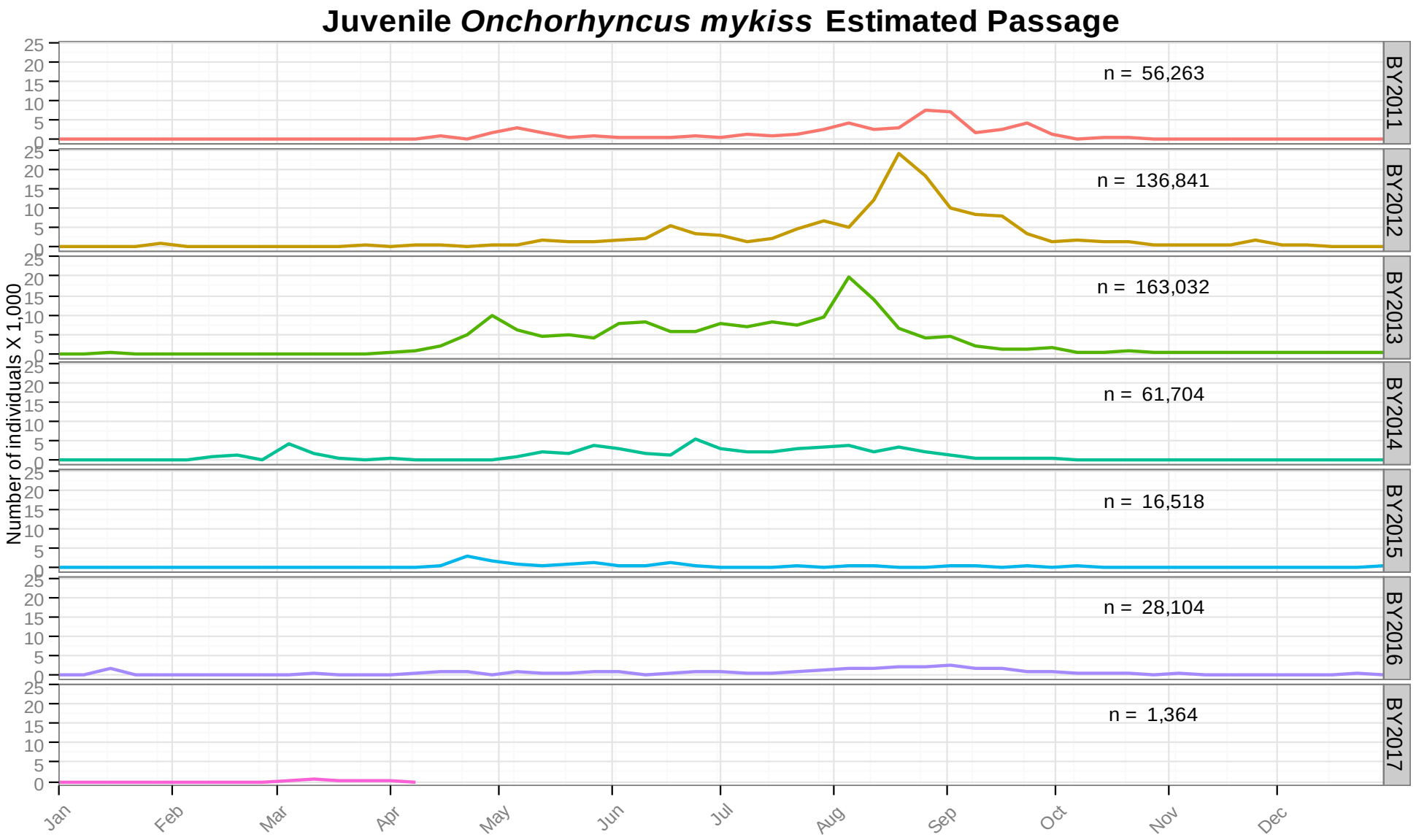

Figure 3. Weekly estimated passage of unmarked juvenile Rainbow/Steelhead trout at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period January 1, 2011 to present .

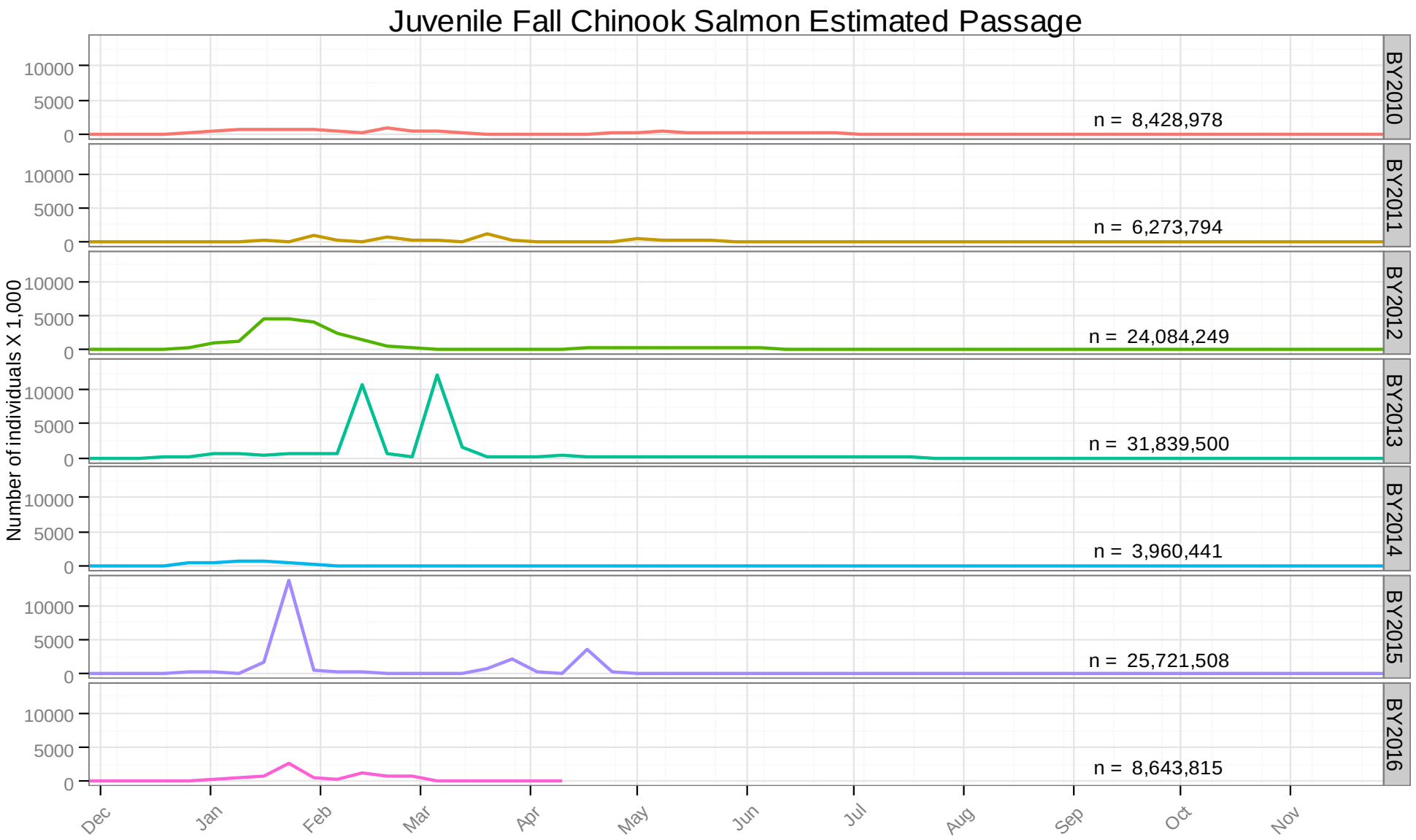

Figure 4. Weekly estimated passage of unmarked juvenile fall Chinook salmon at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period December 1, 2010 to present .

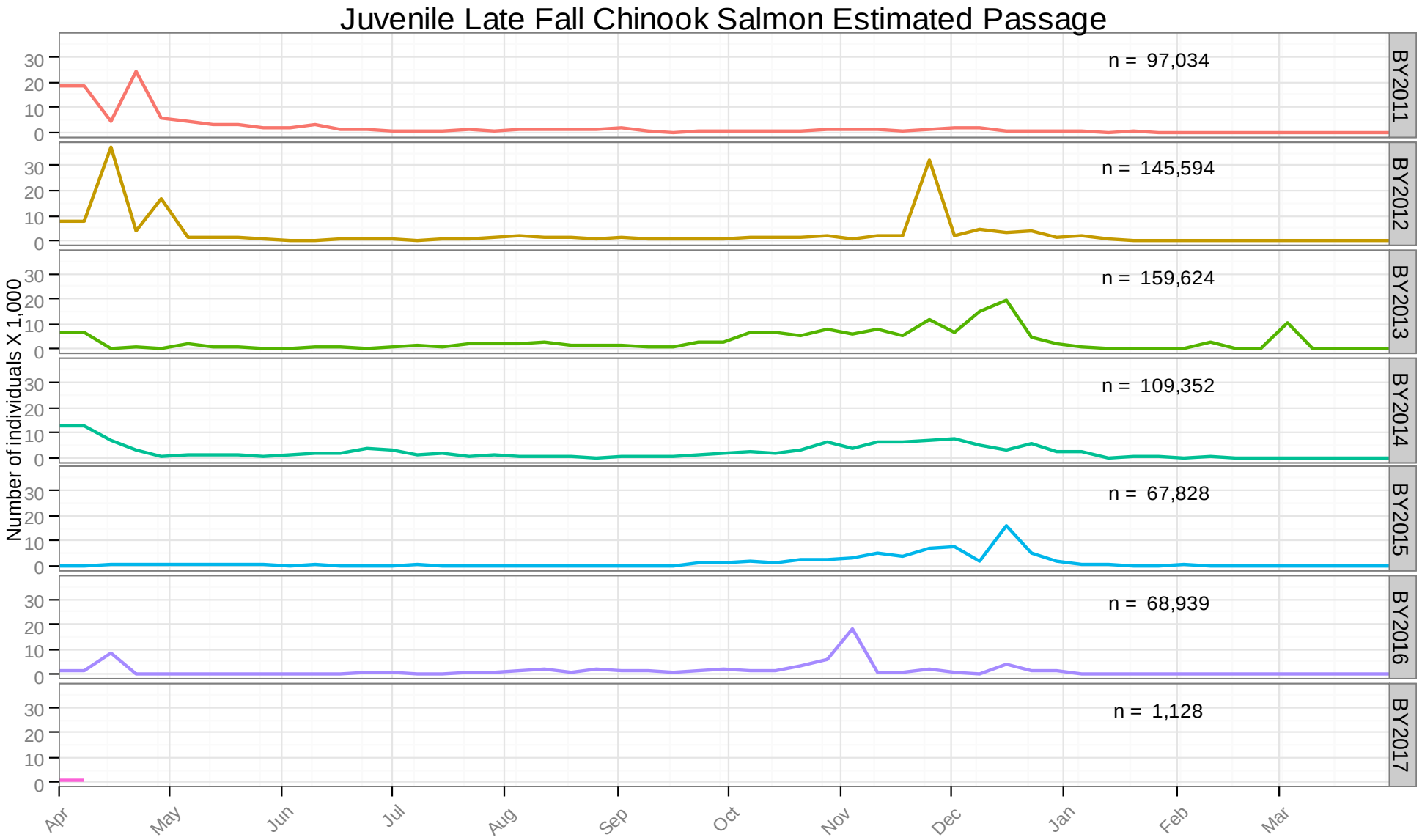

Figure 5. Weekly estimated passage of unmarked juvenile late fall Chinook salmon at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period April 1, 2011 to present .

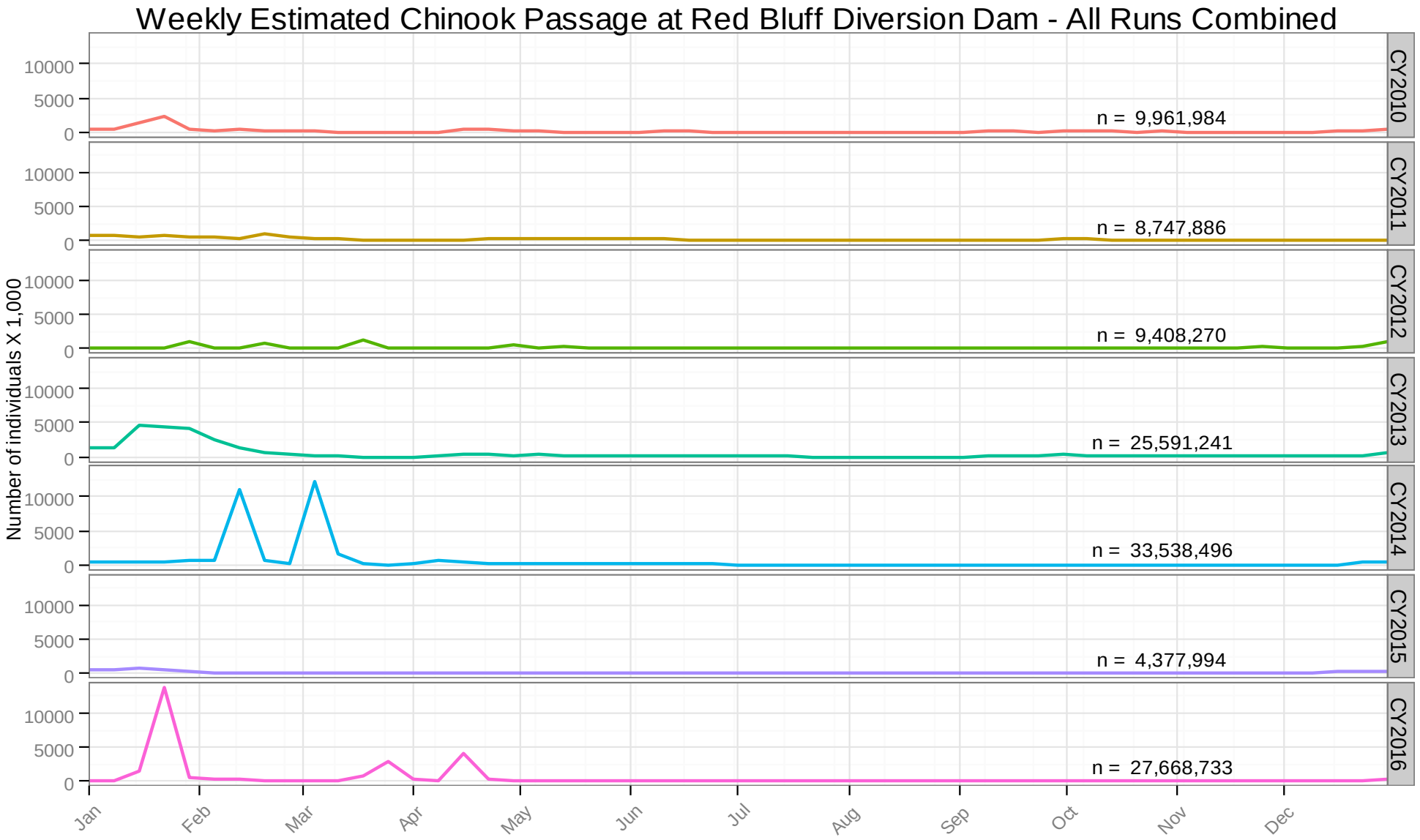

Figure 6. Weekly estimated passage of unmarked juvenile Chinook salmon at Red Bluff Diversion Dam (RK391) by calendar year. Fish were sampled using rotary-screw traps for the period January 1, 2010 to December 31, 2016